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EXPERIMENT Progress Report, Feb. - Mar.
1973 (Grumman Ecosystems Corp., Bethpage,
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National Aeronautics and Space Administration
Goddard Space Flight Center
Greenbelt, Maryland 20771

Subject: NASA Contract NAS-5-21811, Virgin Islands ERTS-1 Experiment
#589, PRO 45, Type I Progress Report for the Period February-
March 1973

Gentlemen:

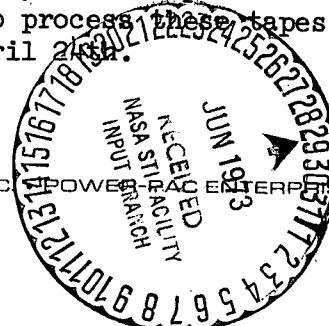
During February an internal review of the subject program showed that the estimated costs to completion of the experiment (analysis of data and submission of final report) exceeded contractual authorization. This has been reported in correspondence and in a meeting at GSFC on March 1, 1973.

In an effort to minimize all expenditures we have held up analysis of the I²S aircraft imagery and the ERTS-1 imagery until we accomplished a reliable print out of the precision tapes of the one scene of St. Thomas, #1086-14162. The objective is to locate and record those anomalies appearing on ERTS-1 data for the harbor area, and then correlate aircraft I²S and ground in-situ data with these specific ERTS-1 boundaries. This procedure will minimize the amount of I²S and in-situ data used for correlation. Our computer engineers have been in direct contact with their opposite members at GSFC in an effort to resolve problems of geometric accuracy of the precision tape print out. Resolution by telephone is not promising and we have scheduled a conference at GSFC for 24 April 1973.

Present status of the program may be briefly stated as follows:

- Computer processing of water quality data except Precision Tapes has been completed.
- Precision tapes were received by Grumman Ecosystems Corporation on 19 March 1973. After several attempts to process these tapes a meeting at GSFC has been scheduled for April 24, 1973.

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- Current meter data has been processed from tapes. Plots of velocity vectors for desired times remain to be accomplished.
- Dr. D. Olsen, MRDF, has completed approximately 80% of the task of organizing and evaluating the computer print outs of water quality data.
- The I²S projector was received on February 22nd on a two month lease. A cursory examination of all the I²S imagery was made, those scenes of the St. Thomas harbor, optical targets, and sample stations were catalogued and the outstanding anomalies listed for later more detailed densitometric measurements. Color 35 mm photographs of these scenes were made for future reference. The projector was returned on March 30, 1973. (Costs were prorated for five weeks rather than two months.)

Tasks remaining to completion:

- Precision tape print outs. The first tape print out showed variances of 13 counts in a total range of 128. These small differences in radiance values are difficult to detect in the imagery and constitute justification for using precision tapes, assuming geometric problems can be resolved.
- Water current plots for those specific time periods selected for correlation, in order to understand the mass movement of the harbor waters.
- MRDF, Dr. David Olsen, analysis of the data print outs to develop water quality and biological trends. (Analysis of variables was accomplished, but factor analysis of some of the data, although desirable, might be omitted for lack of funds.)
- Densitometric measurement of a small portion of the ERTS 1 scene #1087-14162) as a check on geometric accuracy of the precision tape print outs.
- Establish the degree of correlation existing in the foregoing. In general this would be accomplished by following the Flow Diagram, Figure 1 of the Six Month Report.
- Write Final Report.

We intend to submit a revised estimate to completion after we obtain a valid precision tape print out. We feel that such a print out will enable us to pinpoint the exact geographic locations for correlation and thereby minimize the costs and still result in a final report with substantiated conclusions.

Yours very truly,

GRUMMAN ECOSYSTEMS CORPORATION



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